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**THOMAS G. NEWMAN,**
EDITOR.

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# Editorial Buzzings.

**Friend Demaree** has been suffering with another severe attack of sciatica. On the 26th ult. he wrote us as follows:

I have suffered terribly for two weeks past. Old Sampson sciatica has "smote me hip and thigh." I guess I know what that passage means now.

G. W. DEMAREE.

**Drowned.**—Willie Baldensperger, who has for many years been a close reader of the AMERICAN BEE JOURNAL in Palestine, was drowned on July 26, 1891, while bathing. His brother writes us as follows: "Besides a good brother, I lose a good friend in him. More than one-half of our time was taken up with bee topics." In his death the BEE JOURNAL has lost a devoted friend in the land that is sacred in the hearts of all Jews and Christians. Accidents happen everywhere.

**The Honey Crop** of California for 1891 is only one-fourth of the amount produced in 1890. So writes Mr. Geo. W. Brodbeck, of Los Angeles, Calif. The Southern California Bee-Keepers' Association will hold its annual convention next month.

**Our Nebraska** friends will be disappointed this week. J. M. Young was to have made a good display of honey at the fair from his apiary. For two weeks he has been suffering with a severe attack of fever, from which he is but just recovering. This will not only prevent his exhibiting, but also preclude his being in attendance.

**Brazil** will also be represented at the World's Fair. Capt. Rodgers, Commissioner to Brazil for the World's Fair, reports that "the State of Minas Gereas, Brazil, has appropriated $25,000 to meet the preliminary expenses of securing a representation of that State at Chicago in 1893. This is in addition to the appropriation made by the General Government of Brazil."

**Gathering** the Fall crop of honey in Canada is thus described by friend Jones in the *Canadian Bee Journal:*

Our bees as they leave the home yard now, all sweep around to the north, and on walking through the yard in the evening, the odor of the mint honey was very easily detected. We took a run down along the flats and creek bottoms, and found the bees in large numbers, on what we term horse-mint, or wild mint, which is quite plentiful, and of which there are many varieties just coming into bloom. The Canadian thistle, in many places, has almost ceased blooming, but we passed a field to-day which seemed to have just come into bloom, and it would delight you to see the bees going from head to head, and the size and transparency of their bodies, as the bright sun shone on them, would indicate that they were filling up rapidly, and the odor from the field was so marked, that we knew the flowers contained abundance.

**A Failure,** is the result of the experiment by Mr. A. I. Root, in attempting to "cure *la grippe* without medicine." We were very skeptical about it, for we have had all the experience in that line necessary to bring about that state of mind during the past two Winters. Our testimony is that it is the most persistent and diabolical disease we know of! We are sorry to learn that Brother Root's theory of cure has failed, for it would have been a grand thing to have been able to "enjoy" a visit from *la Grippe* after so many thousands have pronounced it the most unenjoyable thing in the world. Brother Root says this in the last number of *Gleanings:*

Well, friends, I am here in bed yet, but have much cause for thanksgiving. My blood has got down to only 98 4/5° —only 2/5 of a degree, as you will notice, above the great level of all the blooded universe.

Brother Newman smiled a little at my "enjoying" having the grip. Well, I take it all back. There was a point reached where even *I* couldn't find a thing enjoyable about it; and this reminds me, since I have said so much about doctoring *without* medicine, that I shall have something to say, Providence permitting, in our next issue, in regard to doctoring *with* medicine. Very likely the great Father is teaching me some needed lessons along this line.

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**Bees Work at Night** in the hive, and build comb as perfectly as if an electric light had shone there all the time. Many times we have been asked why they prefer the darkness, but there are good reasons for doing so.

All know that honey is a liquid without any solid sugar in it. But, after standing, it gradually assumes a crystalline appearance; in other words, it granulates, and ultimately will become a solid mass.

Some have stated that this change is due to the same agent which alters the molecular arrangement of the iodine of silver on the excited collodion plate, and determines the formation of camphor and iodine crystals in a bottle.

We are informed that Prof. Schieber enclosed honey in well-corked flasks, some of which he kept in perfect darkness, while the others were exposed to the light. The result has been that the portion exposed to the light soon crystallizes, while that kept in the dark remains unchanged.

Hence, we see why the bees are so careful to obscure the glass windows which are sometimes placed in their hives.

The existence of the young depends on the liquidity of the saccharine food presented to them, and if light were allowed access to this, in all probability it would prove fatal to the inmates of the hive.

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**At the World's Fair** no side shows are to be permitted within the Exposition grounds. The Directory has decided that the entrance fee shall entitle the visitor to see everything within the enclosure. There will be, however, several theatres built and kept running, at which the finest talent in the world, it is expected, will appear, and visitors who choose to attend the performances, will have to pay an admission fee. Such sights as "A Street in Cario," will be free, but natives of oriental countries, in a few cases, will be allowed to charge a small fee to special performances of a theatrical nature.

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**The Exposition** at Chicago this year, will open on September 24. If the Northwestern Bee-Keepers' Convention is held this year, it should be during the Fat Stock Show—about November 19 would be a good time.

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**The** numerous exciting events in the yachting world, and the keen popular interest shown this season in the noble sport, make the paper on "New York Yachts and Yachtsmen," in Frank Leslie's *Popular Monthly* for September, peculiraly interesting and timely.

# Queries and Replies.

## Honey-Dew for Winter Stores.

QUERY 783.—1. Will bees winter safely on honey-dew, in a dry cellar of an average temperature of 45°? 2. If not, can I winter them on combs from an extracting super filled with sugar syrup and no pollen; reserving the brood-combs filled with honey-dew for next Spring? —Nash.

1. I think so. 2. Yes.—JAMES HEDDON.

1. In my climate they would.—J. P. H. BROWN.

1. I have been told that they will not. 2. I think so.—C. C. MILLER.

1. They may, but it is not so safe as clover honey. 2. Yes.—DADANT & SON.

1. A trial only would determine. 2. Yes; that would be an excellent way.—R. L. TAYLOR.

1. I would be afraid to risk it. 2. This I believe to be your safest plan.—J. M. HAMBAUGH.

1. I had bees winter fairly on honey-dew one Winter, which is all the experience I ever had with it.—G. M. DOOLITTLE.

1. Yes, and no. It depends on the quality. We now have honey-dew that I have no fear of. If rank, no. 2. Yes.—A. J. COOK.

1. That is a question that bothers me a good deal just now. My experience says no, but still I may be mistaken. 2. Yes.—C. H. DIBBERN.

1. Yes, if it is of good quality. 2. Yes. That is the "pollen theory," simon pure, and is the best way to winter bees.—A. B. MASON.

1. I do not know. I should think that they might, if it was gathered and well ripened in the early part of the season. 2. Yes.—MRS. L. HARRISON.

1. I should be afraid to try it, if there was any considerable amount of honey-dew in the brood-chamber. 2. You can, undoubtedly.—EUGENE SECOR.

1. There are many kinds, or grades, of the so-called honey-dew. I have seen a little of it that ought to kill anything that could be induced to swallow it; and I have seen more of it that would be perfectly safe as a Winter food for bees. 2. Sugar syrup will winter bees about as well as good honey, and you need give yourself no anxiety about pollen. Bees need pollen to start brood-rearing in the early Spring.—G. W. DEMAREE.

1. I do not believe they will, though I never have tested it. 2. Yes. Sugar syrup is claimed by many to be the very best Winter food. I should not use the combs of honey-dew for any purpose.—J. E. POND.

1. It depends on the kind of "bugs" that produce the honey-dew. That from beech forests is fatal to bees, in or out of the cellar. That is the only kind I have had any experience with. 2. Yes. —M. MAHIN.

1. No. 2. It is safe to winter on combs having pollen and sugar syrup, but not so safe without pollen. Where bees can have Winter flights on the summer stands, if well protected, they will winter safely on honey-dew.—G. L. TINKER.

1. That depends on the quality of the "bug-juice" and the Winter temperature. In a mild Winter it might do, but in a severe season there would be great danger in its use. Many whole apiaries have been ruined by its use, and it would be wise to advise caution. 2. Yes; that will be a safe way of disposing of the honey-dew.—THE EDITOR.

### Keep the Bees at Work.

The bee-keeper cannot afford to have idle bees for want of room, or because they refuse to work in the supers, says the *Northwestern Agriculturist*. Try in every way to induce them to work above.

One way is to replace one or two frames of young larva below, with empty combs, and then with the zinc excluder keep the queen below. By putting the brood in the center of the upper story, they can be started in the top.

Those working for comb-honey take sections that were partly built out the year before, or from colonies that are already working above, and put in the hives they are trying to start.

This is where beginners are most apt to fail. They think something is the matter with the bees, when they only need coaxing to start them above. This should be done as early in the season as possible, for if neglected, and the bees are crowded below, they will get ready to swarm by starting queen-cells.

# Topics of Interest.

## "Humbuggery in the Queen Trade."

HENRY ALLEY.

Mr. C. J. Robinson, on page 271, has given the readers of the AMERICAN BEE JOURNAL a very lively article on the above subject. The reflections on some of the "noted" breeders has attracted my attention. About the only point which I think is aimed directly at me is, "The most recent humbug is the puffing of *yellow* Carniolans." Well, let us see how much humbuggery there is in puffing the yellow Carniolans.

The first Carniolan queen brought to America came to the Bay State Apiary. That was some ten years ago. Of course, the imported queen was used for a breeding queen. As soon as there were plenty of Carniolan drones reared from the imported queen, I had a fine lot of young Carniolan queens to be mated.

This could not be done in the same yard with the Italians, and so the Carniolan bees were removed to a yard where there were no other bees within a distance of more than one mile. The young queens were mated promptly, and in due time the young worker-bees put in an appearance, and I was surprised to see yellow-banded bees from *every* queen.

Now this happened, notwithstanding the fact that there were several thousand Carniolan drones in the same yard with the queens. Had but few of the young queens produced bees that gave yellow bands, it would have been natural to suppose that they had mated with Italian drones, but no man of any experience with bees has the least idea that *all* these young Carniolan queens were mated to Italian drones from an apiary over a mile away, while there were so many Carniolan drones near the queens.

Here let me say that the imported mother did not produce *one* worker-bee that had the faintest yellow band. But the young queens were very light colored (not yellow), a fact plainly indicating that there was some blood in them that was not Carniolan.

Well, these bees swarmed so much that they were abandoned, and no more Carniolans were reared in my apiary till the year 1889. I then purchased of Andrews & Lockhart a full colony of as fine and well-marked Carniolan bees as ever came into America—not a bee in the colony that was not a typical Carniolan. Queens were reared from this colony, and the same methods to insure pure mating was adopted as with the imported queen received in 1881. The result, however, was the same.

I could not produce a "pure" Carniolan queen, or rather a queen whose bees were purely marked. I found that these bees could easily be bred to a pure golden yellow, clear yellow or orange yellow. So, selecting the light colored queens and drones, I soon produced the golden Carniolan bees.

Now, can any one tell the readers of the BEE JOURNAL where the "humbuggery of yellow Carniolan bees" comes in? Is not the process of producing yellow Carniolan bees as simple as anything can be? Does any one see any reason for cheating or swindling in this matter? Is there any reason why any one need mate dark Carniolan queens to Italian drones to produce yellow Carniolan bees?

Here is a problem for Mr. Robinson to solve: In 1889 I had an order for some Italian queens to be mated to Carniolan drones, and Carniolan queens to be mated to Italian drones. In both cases the progeny of these queens were handsome—yes, beautiful—Italians; not one dark bee from either queen. Why was it that these queens did not produce what are called hybrid bees? Simply for the reason that the yellow blood predominated. This is all there is about it.

*The Carniolan race of bees are the original yellow bees.* Has any reliable authority decided whether the Italian bees, in their native country, were produced by the Carniolan race, or that the yellow in the Carniolan came from the Italians?

As not a pure queen has ever come from Italy to America (that is, a queen all of whose worker progeny were three banded, and whose daughters were golden in color), it is safe to say that the bees in Italy are hybrids.

Why is it that the Italians will degenerate in color, and breed back to black bees, while the Carniolans will grow more yellow each succeeding generation? Any one can answer these questions; it is plain and evident enough.

Why is it that everybody who rears the silver or dark Carniolan queens has the same trouble to produce pure Carniolan bees? How many queen breeders in this country can say that they have queens that will duplicate themselves?

The black tint in the Italians will increase always, while on the other hand the yellow in the Carniolan is as certain to come out more prominently each generation. It is nature in both cases.

Mr. Robinson has much to say in praise of some of those parties who sent out the first Italian queens. I paid a big price to some of the men mentioned for *pure* Italian queens, but not one, however, was pure—and from no high-priced queen purchased could I rear more than 25 per cent. of yellow queens.

I do not claim that these men were dishonest—I know they were not. They sent out the best queens that could be produced, and which at that time were worth the big money paid for them, even though the queens were impure.

Of the golden Carniolans let me say one word further. Up to date I have sent out about 500 golden Carniolan queens, and not one word has been said against them, while on the other hand I have heard a good deal in their praise. One of the oldest queen breeders in the country, to whom I sent a golden Carniolan queen, has this to say of the new strain of bees:

"The golden Carniolan queen came to hand promptly, and was safely introduced. I am well pleased with her; have begun breeding from her to requeen my apiary. I have reared and sold many thousand Italian, Cyprian and Holy-Land queens, but never had one please me better than the golden Carniolan queen received of you.

"E. T. FLANAGAN.

"Belleville, Ills."

I have hundreds of such testimonials. Now, if these bees give such satisfaction, where does the humbuggery come in? If yellow Carniolans are hybrids, why is it that 95 per cent. of the young queens are duplicates of their mother? There is in my apiary a large number of queens that produce the most beautiful queens and bees that ever graced an apiary. These bees are but four generations from solid black or gray Carniolans. Each succeeding generation produces more beautiful and yellow queens, drones and worker bees.

One word more and I have done. Has Mr. Robinson discussed this matter in an impartial manner, or in a spirit of kindness, and for the good of all? Here let me ask Mr. R. how much experience he has had with the Carniolans? Has he ever had any?

Has he not called the producers of the golden Carniolans humbugs, without presenting one particle of evidence to back his wild statements? I will give Mr. R. a chance to make good his claim, if he thinks it can be done.

I will place in the hands of the editor of the BEE JOURNAL $100 to be paid for a Carniolan queen bee that I or any competent queen breeder cannot produce the most beautiful golden bees from, and no other bees shall be used but those from the pure Carniolan queen selected. I am willing that Mr. Frank Benton shall select the queen, or get some one to do so for him, and that Mr. Newman, A. I. Root and myself shall select the person to conduct the rearing of the queens.

If yellow bees cannot be produced by the method I will give, then I am to pay the $100, but if the yellow bees and queens are produced, then I am to pay nothing.

These bees may be reared on an island in the middle of the ocean for all that I care. Rear them as many miles from all other bees as will insure pure mating, so that no one can say that any of the queens were mated to a yellow drone.

I have made the above plain statements, and hope all the readers will find therein sufficient evidence to convince them that there is no humbuggery about the golden Carniolan bees.

Now, I have taken a great deal of pains to produce this strain of golden Carniolan bees. I consider it a progressive step, and that by the development of this most beautiful, quiet strain of bees, I have done for the apicultural world a good thing. These bees possess all the good qualities of the Italians and gray Carniolans, and are superior in all respects to any race or strain of bees in the world, unless it be the Punics, of which we know but little.

In conclusion, let me say that any one who spends his time and money to benefit his fellow man, is not very well paid if he is to be considered and called a humbug and swindler. It is poor encouragement for any one to undertake the improvement of the races of bees, or to take any step in advance of the old methods so long in use. I do not propose to remain in the old ruts of bee-keeping, if there is a chance to get out of them. That I have made an effort to advance apiculture cannot be denied by any bee-keeper who has a knowledge of my history.

I trust no young bee-keeper will be deterred from making an attempt to

advance bee-culture for the reason that some one has tried to "sit down" on the writer for what he has endeavored to do.

Wenham, Mass.

## Large Apiaries in Italy.

DR. A. DUBINI.

I have made a visit to Prof. A. Mona, at Locarno, where he is occupied in the High School, in the garden of which is his home apiary. There I found a goodly number of his large hives, constructed with movable bottom-boards, and externally clothed with straw; there were spread about also many small hives of nuclei, likewise with movable bottom-boards, holding 4x5 frames all covered with bees, each with its queen already fecundated.

Opening one of these large hives is found a diaphragm which serves in Summer to change the capacity at will, and which is replaced in Winter by another, thicker, made of straw and slats of wood which helps to keep the colony warm. Prof. Mona calls this diaphragm a "restrictor" (in America a division-board), which word, he thinks, better designates a movable partition.

The frames of the nuclei are half the size of those in the large hives. By cutting a large frame and its comb in halves, he can at all times take brood from a large hive to a nucleus.

Prof. Mona thinks that queens prefer deep frames in which they can extend the egg-laying without interruption. Sometimes he fastens two of the small frames into one large frame, which, when filled with brood are detached, and put into nuclei. He almost always gives to the nuclei ripe royal cells, but sometimes also virgin queens, if they are just hatched, or even queens already fecundated.

A very intelligent young man, Ernest Ruffy, of Vaud, assists him in his work, and the Professor shares with him a portion of the profits, on account of his great aptitude and cleverness in the business.

Just as we arrived, Mr. Ruffy was engaged in closing up a nucleus to go to Paris, containing a beautiful queen with three pounds of bees, and had still another to prepare for the same destination.

We passed the evening together to a very advanced hour, and I do not need to tell with what pleasure and profit to myself. I am indebted to the profound wisdom of the Professor, and to his enlightened experience, as also to his amiability, for many useful and practical hints for which I take this opportunity to express my deep gratitude.

One wish of the Professor would be to establish in some good honey locality in Lombardy, an apiary of 200 to 300 colonies, which would be transported, when the honey-flow is past in the plain, to the mountains of Lake Maggiore, in order to profit by the flowering of the walnut trees, buckwheat and heather.

Early next morning I left Locarno by rail, and stopped at Gordola. At a short distance from the station stands two of the apiaries of Mr. Jean Pometta, a clever and ingenious mountaineer.

One of the Pometta apiaries is at Tenero, three-quarters of an hour from Gordola; another at Gudo, at a great altitude, and about two hours' distance from Gordola; the third is at Lavertezzo, in the Valley of Verzasco.

I did not meet Mr. Pometta at Tenero, but was received by the amiable Dr. Galletti, in whose house and garden Pometta keeps his tools, and about 150 colonies and nuclei scattered around on the grass. Several of the hives are the same as those of Prof. Mona, but the others, of a newer make, are of the American pattern.

I found the bees here singularly beautiful, with three distinct yellow rings, and the Doctor told me that Pometta conscientiously gives great attention to the selection of the queens. The Doctor, while showing me some sheets of foundation, said, "It is hardly to be believed how well the bees know what to do with foundation, in the cells of which we often perceive on the second day, honey and eggs."—*L'Apiculteur.*

## Feeding Back Partly-Filled Sections.

G. W. DEMAREE.

The early honey season in this part of Kentucky accorded with the predictions of the prophet, Samuel Wilson, of Tennessee, as made known to me by a postal card from that gentleman in the latter part of last Winter. It was fairly good, and my honey crop is above the average. My bees, however, were kept together at work, instead of letting them spend their opportunities and forces splitting up into fragmentary swarms. Each apiarist, however, must study his own locality, then act intelligently.

Before I take up the subject that moves me to write this article, I am tempted to denounce the sharp corners of the one-piece sections. They have worried me this season as never before. Somehow or other, more nice sections have been gouged for me this season than ever before, by the sharp corners of these same one-piece sections. There is no reason why they cannot be better made. It would be just as easy to finish them with an easy, round corner as any way, if proper machinery were used. Any manufacturer who will give us a one-piece section with smooth, round corners, will no doubt get his reward in the way of patronage.

The honey season promised so fair last May, that I was tempted to carry the tiering system too far for the outcome of the season, and this gave me nearly 500 unfinished sections with which to take up my experiments of last season—"feeding back" to have them finished.

I selected 3 colonies to do the work. The brood-chambers were contracted with sealed combs of honey, and brood in all stages. The feeders used are the same size as the section cases, except the projection at the back of the hive to give room for the feed holes. The "climbers" (or partitions) in the feed boxes must not be more than a half inch apart, or the bees will build bits of comb in them if long in use.

Continuing the experiment from last year, the feeders were placed directly on top of the brood-chambers, as the most convenient and best place for them. The section cases were tiered on the feeders, in the usual way, and when one case was pretty well filled, and the most advanced sections began to be sealed, the case was lifted and another one put under it. Tin separators were used in T cases, and the partly sealed unfinished section combs were uncapped with the uncapping knife, and trimmed when they needed it, to go between the separators.

If nice work by the bees is desired, every cell must be uncapped, or there will be an irregular surface on the face of the sections, and the color of the capping will not be the same.

The fullest sections were put on the sides and ends of the cases, and those containing less comb and honey were placed in the center. The cases were put in readiness as they were needed to keep the bees supplied, for the uncapping of the sealed spots will set the honey to dripping, and there will be waste, if the work is done long in advance of their use.

Now, about the feeding. How much, and how often, and in what condition to feed? These are matters that were looked after and watched with much care and no little interest. As to how much may be fed at a time would, in a practical point of view, depend on how much empty comb was in the section case at the time the feeding was done, but experience has led me to feed three pounds of good, thick honey per day, diluted with one and one-half pints of water. This is fed just before sunset every evening, rain or shine.

To most people, this would look like light feeding to have comb built and honey stored right along—and so it would look to me if I had not taken the pains to investigate the matter.

If you will take a clean surplus comb and place it in the center of a surplus case when the bees are gathering nectar from white clover rapidly, and when it is filled with nectar fresh from the fields, remove it and subject it to a temperature of about 90°, under a current of air, until the nectar in the comb is evaporated to the consistency of good thick honey, you will find by weighing the comb, before and after the process of artificial evaporation, that the loss by evaporation is from 50 to 66⅔ per cent. Thus, in a practical way, 3 pounds of standard honey is a fair representation of from 6 to 9 pounds of nectar per day, which is a splendid income per colony during a good honey-flow from white clover in my locality.

Of course, the feeding may be done more rapidly, but it is a question of economy and profit, and the matter must be settled on this basis. I have reason to believe that the nectar from some sources will lose in evaporation as much as 80 per cent.; and even with white clover much depends on the state of the atmosphere when the nectar is gathered.

Two colonies were made to finish up 480 sections that were in all stages, from one-fourth to three-fourths full of comb and honey, and that the work was done at a good margin of profit there was no room to doubt.

The third colony was put to work to solve a knotty problem, to-wit: How much liquid honey is necessary to complete a pound of comb-honey? Perhaps this question will never be settled to a dot, but in a practical way I think I have settled it.

This trial colony was prepared as described above, and was put to work on a case of partly-finished sections, and after they had begun work in full force, and had the case of partly-filled sections

well on toward completion, the case was lifted, and a case of new sections, filled with Dadant's extra thin foundation, was put in its place, and then a bee-escape board was placed on it, the lifted case, with its bees and honey, was placed on the escape-board and left there until the bees had all passed through the escape below. This case was then given to one of the feeding colonies to be completed, and the trial colony was left to go to work on the new sections. The feeding went on regularly at three pounds a day, diluted with one and one-half pints of water. It required 41 pounds of honey to complete the 32 sections.

The second case was prepared with starters only, of the same make of foundation, the feeding was kept going without intermission, and it required 30 pounds to finish up the 32 sections, showing that there was a loss somewhere in the first experiment.

A third trial, with starters only, was made, and it required just the same as the preceding trial—30 pounds—to complete the 32 sections. In the aggregate there was fed 101 pounds of honey, and 96 sections were completed—an average of 33⅝ pounds to the case of 32 sections.

Were I to stop here, these figures would be misleading, as the idea is abroad that a one-pound section means, in fact, one pound of honey, which is by no means the case. The sections used were 1¾ inches in width, and fitted closely between tin separators. The cases were accurately weighed before they were given to the bees, and weighed again after they were taken off of the hive. In net honey, and wax added by the bees, the sections averaged exactly 12 ounces—24 pounds to the case of 32 sections.

It will be seen that the 3 cases of sections of 32 each, contained 72 pounds of honey *net weight*, and it required 101 pounds of liquid honey to produce the 72 pounds of comb-honey. But as a matter of fact, these 12-ounce sections represent in the trade *one pound of honey* each, as they are sold by the piece for as much as heavier sections built without separators, and as a matter of profit, this is the way to put it.

Upon this basis, I produced 96 sections (12 ounces each), worth, at 14 cents each, $13.44, at a cost of 101 pounds of extracted-honey at 10 cents, worth $10.10; leaving a profit of $3.34, less the cost of sections and foundation starters.

In conclusion, I wish to say that I have had too much experience to be carried away by the results of an experiment of this kind as it cannot be known how much honey (if any) may have been carried by the bees from a brood-chamber crowded with sealed honey, during the time these sections were in process of completion, but I think there are more chances in favor of loss in this direction than gain, and if I live, I hope to be able to repeat these experiments on a larger scale in the future."

Christiansburg, Ky.

## Cell of the Honey-Bee.

W. H. RAIGENT.

When we behold this little insect constructing its cell, to contain its Winter stock of honey—constructing it of that form which is demonstrably the strongest, and the most convenient—it seems the extravagance of absurdity to suppose that the instinct by which it is directed is the offspring of ignorance.

The phenomenon, indeed, is one of the most extraordinary that the animal world presents to our contemplation. It must be evident to every one who has given the least attention to the obvious properties of different figures, that there are only three which will admit the junction of their sides, without any vacant spaces between them, all the figures being equal and similar, namely, the square, the equilateral triangle, and the hexahedron; of these the last is the strongest and most convenient.

In this form, then, we find that all the cells are constructed. This is a curious and wonderful fact; and what is quite remarkable, the middle of every cell on one side is directly opposite to the point where the three partitions meet on the opposite side. By this position the cell receives additional strength.

This is not all. If human ingenuity were to contrive a cell, which would require the least expenditure of material and labor, it would be a question not easily solved, at what precise angle the three planes which compose the bottom ought to meet.

The late celebrated mathematician, Maclaurin, by a fluxionary calculus, determined precisely the angle required; and he found by the most exact mensuration the subject would admit, that it is the very angle in which three planes in the bottom of a cell of honey-comb do actually meet. The same curious fact was ascertained by a German mathema

tician: Reaumur, presuming that the angles were adopted for the purpose of saving material, proposed to Koenig, a mathematician of eminence, that he should determine what would be the angles of a hexagonal cell, with a pyramidal base, to require the least material. By the infinitesimal calculus, he ascertained that the greatest angle should be 109° 26′, and the smaller 70° 34′—the very angles which the insect adopts.

What an astonishing coincidence is this! A profound mathematician is required to solve a very difficult problem; and it is found that his conclusion, gained by the exercise of considerable ingenuity and deep thought, was practically exhibited in the operations of the bee. How few are capable of that scientific investigation which this insect illustrates by its practice!

It seems the extravagance of folly to believe, that out of the numerous different combinations of which two angles are susceptible, that which *most* saves labor and material should be adopted by random chance, or blind necessity. He that holds the ocean in the hollow of His hand—He it is, in the darkness of the hive, guides this little insect to fashion and mould the cell, and form the comb in the beautiful and wonderful form in which we behold it.—*British Bee Journal.*

## Are Your Bees Ready for Winter?

A. D. ELLINGWOOD.

One reason why so many bees are lost in wintering is because they lack preparation in the Fall. The bee-keeper is so anxious to get a large crop of surplus that he forgets to see that each colony has an abundance for their own use.

By Sept. 1 the sections should be removed from all hives, unless the lower part is well filled, and the colony seems strong enough to spare the workers above. If a colony has 25 or more pounds of honey in the brood-comb, and are doing good work in the sections, of course it would not be policy to take them off; but if the colony is weak and short of stores, the sections should be removed, and the hive contracted and made as snug and warm as possible.

No colony should be put into the cellar with less than 20 pounds of honey for their Winter's use, and if your hives do not contain 15 or 18 pounds by Sept. 15, feed the bees at once.

Syrup should be fed quite thin, as the bees can handle it better, and it is not so liable to candy. Granulated food is poor fare for bees to Winter on.

I believe the condition of the food, and its position in the hive, has more to do with successful wintering than the temperature. A hungry bee will freeze and die almost anywhere, but a well-fed bee, with plenty of nice honey to look forward to, does not like to die any better than a man with a well-stocked house, and a good, large family.

No other animals make such provisions for Winter as do the bees. They delight in having a large Winter store, and if they are deprived of it they lose heart and die.

It is a curious fact, that bees with 75 or 100 pounds of honey in the hive, will consume less than a colony with 10 or 15 pounds. We have proven this over and over again. They also keep quieter and Winter better.

Berlin Falls, N. H.

## Women as Bee-Keepers.

MRS. J. M. NULL.

Consider for a moment the great armies of women wage workers, who are simultaneously a standing credit and a reproach to many of our large cities! Pinched by penury, worn out and shattered in health by unceasing application, still, at times, lifting the soul above and beyond the ever pressing present, when it is impossible to restrain the irrepressible heart-yearnings for a life amid even the free gifts of heaven, a superabundance of fresh invigorating air, pure cooling water, the all-pervading revivifying sunshine.

Oh, yes; all these, and much more, are to be enjoyed unasked for, free and unlimited in a life in the country, but never in the stifling store, shop, factory, or over-crowded school-room. Think you not bee-keeping offers to such a delightful, fascinating, healthful and lucrative employment?

Woman is a slave to fashion in dress, fine cooking and fancy work; and is constantly sacrificing herself for these luxuries. The woman who never ranges beyond the heat of her own cook stove, cannot rise to the full stature of womanhood, and be the wise counselor of her husband and children that she was designed to be.

Doubtless you have all heard of the woman who has toiled early and late, lo

these many years, for the best interest of her lord and master, and is grudgingly allowed an occasional pittance for needful clothing. One of these lives in my locality. Her husband, the owner of hundreds of acres, kindly granted her space enough in the orchard to place her ten hives of bees, but insisted that she was, on no account, to expect any assistance from him or his help. What she should do would be to dot that orchard with the white domiciles of her bees, claim the profits, and thereafter have in her history an independence day to celebrate.

Women are so constituted as to demand pets; from husband, children and friends, down through the long line of plants, birds, cats, dogs, etc. Her pets are the constant recipients of caressing attentions. Then why not supplant the more unprofitable ones by the busy bee?

Bees for pets! They sting! Admitted, but women love and caress cats and dogs, and bees never scratch nor bite, and have never been known to transmit hydrophobia.

Get women interested in bee-keeping, and there is no knowing to what heights their ambition will lead them. Do you deny them the attribute? Just wait until the Spring bonnet has to be purchased, and some of you who have the bills to foot will agree with me. Women have ambition; yes, with quite a reserve yet to be heard from.

Doolittle, in one of his late messages, says: "No one should follow any of our writers blindly—that is, without having some thoughts of their own." This is a good reason for women becoming bee-keepers. They all have thoughts of their very own.

As managers, women excel. No business will give them greater scope for the exercise of this talent than bee-keeping. She who can out-general decamping swarms when the air is black with masses of excited, determined fugitives, may well weep for other worlds to conquer.

Again, the ambitious woman apiculturist has neither time nor opportunity to either hear or deal out gossip, and thus is happily kept out of many a muddle. Do not imagine that I am taking the stand that bee-keeping can be run without labor, or with but little brains, unless, indeed, you wish to run it into the ground.

But did you ever think of the amount of patience and endurance involved in the production of yards of crochet trimmings, elaborate designs in embroidery, wax-work and painting? Engage the same amount of perseverance, energy and concentration of mind in the apiary, and note the grand results. And although Dr. Miller "don't know" about some things connected with bee-keeping, he is satisfied that he does know that a woman is as good an assistant as he wishes.

To be sure, it is not a "flowery bed of ease," but who could desire it, knowing that those of other vocations must "fight to win the prize." There are to be endured the bedragled skirts on dewy morns, and the long, hot days in June, when the mercury dances around 100°, and the prespiration just flows in streams. But then what cosmetic is superior?

Woman's innate love of the curious and beautiful, will at once be satiated in the pursuit of apiculture. The gold of the bees is never counterfeit. They never make false assignments, nor move out in the night, not paying for the place vacated.

Women are constantly seeking to elevate themselves, and as some of the brightest intellects are engaged in bee-keeping, and since it is confessed on all sides that women possess much more nimble, dextrous fingers than men, and as bee-keeping readily coalesces with house-keeping, being easily carried on in the door-yard, and as we are not asked to accept any less for the fruits of our labor, simply because we are women, pray tell me why bee-keeping is not eminently suitable to women? But it just occurs to me, with great force, that delightful as this harangue may be to myself, its length, breath and depth may be just the least bit wearisome to you.—*Read at the Missouri State Convention.*

## A Lecture on the Honey-Bee.

Mr. G. B. Jones recently delivered a very interesting and instructive lecture on the honey-bee at Toronto, which was illustrated by large charts depicting the various portions of the anatomy of the bee. From the report of *Farm and Fireside*, we make the following extracts:

The family of the honey-bee consists of three distinct varieties of individuals: The queen (or mother), the drones (or male bees), and the workers (or laborers—undeveloped females).

The tongue of a worker averages in length one-quarter of an inch, and is

about as thick as a coarse hair, somewhat flattened, and slightly tapering. Small as it is, it is covered exteriorily with fine stiff hairs; interiorily it is hollow, and contains, folded within it, a small bag, formed of an exceedingly thin, colorless membrane. The tongue terminates in a minute suction funnel, which connects through a valve with the bag; the under side of the tongue is slit its whole length.

The maxillæ, or under jaw, of the bee, is in two pieces, which move sideways, and in conjunction with the caraglossal or side branches of the tongue forms a tube, through which the honey (when in sufficient quantity) is pumped into the pharynx by the up and down motion of the hairy tongue within the tube, just as water is pumped by the vacuum-causing motion of the sucker.

When honey is too scarce to be pumped up, the bee places its tongue-funnel over it, and by expanding its tongue-bag through the slit causes a vacuum, into which the honey is drawn. When this bag is full it is compressed, and forces the honey through an opening in the back of the tongue into the pharynx. When at rest the tongue is telescoped one-third of its length into the mentum (or hollow chin), and, together with the enclosing maxillæ, is folded back under the chin out of danger.

The antennæ of a worker, although as fine as a hair, consists of eight movable and four fixed joints; its outer surface is studded with hairs, which are really nerve sheaths, and is perforated with smelling and hearing holes. On the under side of the first and longest joint are innumerable long fine feathers, each of which contains a feeling nerve. The number of smelling holes is 2,400, while the hearing holes are too numerous to count, as are also the nerve sheaths.

The queen has only 1,600 smelling holes or nostrils, while the drone has 37,800. But how marvellous is the interior of this organ when it contains all the muscles necessary to move all the eight joints in every direction, all the nerves which run, one from each smelling hole, and nerve sheath; a most complicated system of ærating tubes, and the blood.

The bee has three simple eyes like our own, but fixed in the center of its forehead, and on each side of its head one compound eye, resembling a large blue bead stuck there. Each compound eye is made up of 6,300 simple eyes, grouped together and partitioned by a thin scale. Each separate eye of the group is perfect in itself, having its own cornea, pupil, lens, vitrious humor, retina, and optic nerve. How minute, then, must be the partitions and the nerves when the facets (or corneas) themselves measure only 1/1800 of an inch each across.

The brains of the bee consist of one large ganglion, or nerve center; whether the bee's thinking powers lie here is not known, but that bees have what is at least akin to power of thought, the lecturer clearly proved by some wonderfully interesting and amusing facts he related of their action under his own and other reliable observation in unusual circumstances.

The head contains one pair of salivary and one pair of chyle milk glands. A third pair of salivary glands is located in the thorax.

The fore legs carry each a comb for cleaning the antennæ, an eye brush and a tongue brush, while the fore and hind feet are provided with a clothes brush, two claws for climbing rough surfaces, and a sticky pad for climbing smooth ones. A spur under the elbow joint of the middle leg is used to dislodge the loads of pollen from their places in the pollen basket of the hind legs.

The middle feet are really hands, and compose the bee's tool chest, for they are provided with a mason's trowel, a varnish and glue brush, two pairs plyers, two pairs shears, and one pair tongs.

The second joint of the hind leg is hollow on the outer surface, and the hollow is fringed with inward-curving stiff hairs, so as to form a basket in which the bee carries home the pollen of the flowers. They use the pollen to make bread. The manner of loading this basket is most interesting, and was dwelt on for some time by the lecturer, and fully illustrated by the charts. In fact the legs, feet, and the wonderful wings form a subject in themselves which can only be treated with the aid of drawings.

The wax is not gathered from the flowers as many persons imagine, and as many undertake to teach, but is an animal product secreted by very intricate glands under the lower scales of the abdomen. It is the superfluous fat of the bees, and oozes out as sweat, hardening as it meets the outer air into little quadrilateral scales. These scales are used in comb-building.

The sting consists of sting proper, poison-bag and poison glands. The sting proper consists of a sheath and two lances. The lances are grooved, and

work upon a bed on the sheath independently of each other, and each is moved by its own muscle. The ends of the lances project beyond that of the sheath, and are barbed. When the sting enters a foreign substance the lances immediately begin to work alternately in such manner as to carry the sting proper its whole length into this substance, even after the sting has been left behind by the bee.

A healthy sting will work for several minutes after it has been severed from the bee's body. The sting of a dead bee often retains its life and energy for 24 hours. Apiarists are often stung while handling dead bees. While the sting is working, the poison bag is constantly contracting, and forces its contents through an opening between the lances into the wound caused by the action of the lances.

The bee's egg is a marvel in itself, although so small that only a practiced eye can see it. It has its yolk, its white, and its shell, and, besides this, it is enclosed in a beautiful network of air vessels. Three days after it is laid the egg hatches, and we find coiled up in the bottom of the cell a tiny white glistening grub, which for three days is fed on chyle secreted in the heads of the nursing bee. It does not eat this food, but absorbs it through its skin.

In from nine to eleven days the perfect bee emerges from its cell. As soon as it makes its appearance the nurses feed it, and in less than 24 hours it has learned to feed itself, and has begun its duty as a nurse. After spending five to seven days as a nurse, it becomes a wax-producer, and for about a week it hangs with its sisters in a cluster and eats enormous quantities of honey, becoming so fat that the wax glands, to relieve the system, draw upon the fat, and convert it into wax, as already described.

During this time the bees need exercise, and they get it for about two hours each fine day, when from about 2 o'clock in the afternoon till 4 they go out to play in front of their homes. Mr. Jones assured his audience that young bees actually do play, and that none who have watched them can doubt that they really enjoy their outing. He then minutely described, with the assistance of his charts, the process of comb-building.

The third week of the bee's life is the most varied in its labors of any in its existence. It is spent in comb-building, pollen-gathering, house-cleaning, ventilating, home and queen guarding. The bees show an unmistakable desire to be part of the queen's retinue, often intruding themselves among her body-guards to the disturbance of the general order of the hive. It is remarkable how often the guards change. After the third week the bee devotes nearly all its time during the day to foraging, and during the night to comb-building.

## Lights and Shadows of Bee-Keeping.

MRS. C. WINN.

I will begin with the shadows: You know the old adage, "Business first, and pleasure afterward," and surely, if it were not for the business end of the bee, many a shadow would be lifted, and ladies would engage in the work with less fear and trembling.

A very dark shadow is in having a husband that the bees have a special grudge against, even attacking him at our bee convention, making life miserable for two or three days.

Young ladies who are engaged in this work, I would advise you to look to this matter before it is too late, and thus save yourselves many a sad hour experimenting, studying periodicals, books, etc., for remedies for bee-stings.

Another shadow that fell across our path (while the bees yet belonged to my father), was the mice. During the Winter, after the bees were put into the cellar, every week or two would find us changing the frames from one hive to another, and in one hive the mice had built a nest, and before Spring 3 colonies were destroyed, and we killed as many as 14 or 15 mice in traps, etc.

Considering the number of times the bees were disturbed, they wintered well, and 20 colonies were put on the summer stands; but two more were soon lost on account of robbing. Having no experience, we did not know what to do to prevent it, and I think, from articles I have read on the subject, that others than myself have had the same shadow over them.

When I took the bees as my own, there were 18 colonies, and only two or three that did not need feeding to keep them from starving. As, during apple bloom, the weather was so cold and windy that they were unable to gather any honey, I fed them until white clover bloom.

It was while feeding them, that I received the only sting which I have had while working with the bees, and my courage is much stronger now than the

first time I attempted changing a colony to another hive.

But the greatest excitement was yet to come. I had never seen a swarm issue, and I was very much afraid that I would not know when they were swarming, for several times I had been mistaken, thinking that the young bees at play were swarms starting out; so I watched and waited until Monday, June 30, between 9 and 10 o'clock, when the washing was ready to be put out, I then looked to see if they were quiet; they were anything *but* quiet; two swarms were out, and I could not tell which colonies they came from.

I presume you can imagine my feelings when I called: "The bees are swarming," and ran to put my armor on. Father was more brave; he went after them, and was stung several times, but thought it was not much after he got used to it.

One swarm returned to the hive it came from. I found the other queen, caged her, and put her at the entrance to a new hive. Soon the bees began to come back, and the dread and excitement of swarming that colony was over. I then had rest—if any person can rest when they are expecting a swarm to issue at any moment—until July 3, when 5 swarms came out within about 10 minutes, and two of them united. Separate they would not. I had not anticipated any such number issuing at once, and had only two hives with foundation in, and I thought of our friend, Mr. Taylor, when his 12 colonies swarmed and alighted in one tree. O, my sympathy was very great for him just then. Why do bees swarm on washing day, or some other time when it is almost impossible to attend to them? And why does more than one swarm issue at a time?

Everything about bees looks very shady if bee-supplies are not bought, and everything made ready for the needed time. When I commenced I had no supplies on hand, and it made it very hard to keep supers filled, hives ready, etc., especially as I had never done anything of the kind before.

In order to gain surplus honey in the sections, I took out one or two brood-frames, and I presume experienced bee-keepers can tell the result. When I looked at them the next time they had put in a frame of their own make wherever I had taken one out. At this time the shadow that hung over my apiary seemed very dark, especially as the drouth was coming on, and I did not dare to remove these combs, for I feared they would lack supplies, but I have learned from experience that this was not a wise plan.

A shadow that has darkened nearly every apiary, and, as I have been told, made this year more discouraging for bee-keepers than has been known for several years, is the short honey-flow which we had, making the average in this part of the State, I believe, 7 pounds, where there were 80 pounds last year.

December 7, the weather being quite cold, the bees were put into Winter quarters in the cellar, with traps set for the mice, if there should be any (a shadow which awaits them). There were many misgivings from "That Husband of Mine," when he concluded it was best to take the bees in; but his courage did not fail, so procuring a partner in distress, who is more afraid than he (though never stung by them, but afraid he will be), they proceeded to take the bees in, and to their great surprise neither was stung, and I think I can depend on one of them, at least, to move the bees in the Spring.

There are 4 or 5 colonies which are short of supplies. As I have several unfinished sections, would it be advisable to feed them back to the bees.

I do not feel discouraged, for with the shadows there have been many lights to help through the dark places; among them are "Langstroth on the Honey-Bee, revised by Dadant," "A Year Among the Bees," by Dr. Miller, and the AMERICAN BEE JOURNAL, and the latter, coming every week, makes a silver lining to many of the clouds in apiculture. The best of all the shadows in bee-keeping is shade in the apiary.

A very bright light which has lightened my labors, and also the expense, is having a husband who is interested in the work, and who makes the hives, supers, and numerous articles needed in the business, which, if bought or hired made, would deduct quite a sum from the profits. I pay him by letting him have all the honey he needs to eat, and think I have made a good bargain.

It is very pleasant to watch the bees bringing in their loads; it is something I never tire of, and as I watch them it teaches me the wonderful love of Him who has created all things.

One light to me, and as pleasant a duty as I have had in caring for the bees, is looking for the queen. I have had people look in amazement when I spoke of it, and said they hardly dare go outside of the door after taking off honey, and would never run the chances

of being stung looking for queens. It is a beautiful sight to see the bees clinging in clusters to the comb, and trying to hide their queen.

A great lightening of labor for me is having the queen's wings clipped so that I can get her when they swarm, without running after them. I think I should never have attempted bee-keeping if I could not cage the queen so that the swarm will return to her.

Among the brighter lights, is taking off a super filled with honey, preparing it for market, and then getting from 18 to 20 cents per pound, or using it on the table; it seems to make life sweeter. But the greatest light of all the lights for 1890, is the lightness of the honey crop.—*Read at the Northern Illinois Convention.*

Rockford, Ills.

## Fall Work in the Apiary.

E. L. PRATT.

Fall is close upon us, and it is time to commence arrangements for Winter.

Winter cases will be used more this season than ever before, as it is a settled thing that bees will Winter in properly-arranged outside cases safer and cheaper than by any other method.

It matters not how cold your climate is—cold weather does not kill bees, it is frost in and about the cluster.

If the steam arising from a cluster of bees, or breath, as it is sometimes called, is properly taken care of, there will be no loss of bees during Winter or Spring, providing they are strong to start with, and have plenty of stores of either honey or sugar.

Chaff packed into the sides of a Winter case is little better than a single walled hive.

A thick cushion of straw or hay, tucked over the frames, and not coming in contact with the cover or roof, will take all moisture away from the cluster, and pass it gradually off through the ventilators at either end of the case.

The best clustering space is made by tacking wire cloth onto a ⅜ inch rim or frame. This arrangement affords better ventilation, and at the same time makes an excellent Winter passage. It is better than the Hill device, as sugar feeding in Spring can be done to much better advantage, and the bees can be examined at any time without their flying out into the cold to perish.

Six Langstroth combs full of honey will Winter a large colony of bees. If I have any feeding to do I have the food all put into five or six combs, in compact space, rather than distributed through eight or ten combs.

When cold weather comes on I move the full combs toward the middle of the hive; then slip in a frame one-half or two-thirds full for the bees to cluster on. Space all combs ⅛ inch full.

A colony that forms its cluster at one corner or one end of the brood-nest, will not generally live until Spring. A small colony will often Winter perfectly if clustered at the center of the brood-nest, but they are very apt to work to one side.

It is better to Winter few colonies in good condition, than many in poor condition; therefore, I say, unite all weak colonies now, and make sure of good queens throughout.

Beverly, Mass.

## Essential Features of a Bee-Hive.

G. P. MORTON.

The average apiarist, in speaking of modern progress in bee-keeping, is almost sure to place stress on the "hive" as the highest point to be attained in the art of bee-keeping.

That a certain amount of time and talent should be used in this direction, will be agreed to without argument. But to bend every energy in this direction, I think is a mistake. When we investigate the subject, we find that practical bee-keepers are succeeding equally well with the many different makes of hives. This fact alone indicates that good management and adaptability to the business overbalance everything else.

A hive, to facilitate labor, should be simple, easy to manipulate, and of reasonable price. If these points are combined, they will be almost sure to produce a popular hive. I use the simplicity hive, improved, nine frames, or eight frames and a division-board; fill the brood-chamber, use one depth section crates with break-joint honey-board and section support combined, and follow the tiering up plan for comb-honey. For extracted-honey, use same size brood-chambers, with perforated zinc queen-excluder, and tier up two or three stories high with empty combs, nine combs to the story above the brood-chamber.

In taking up the second proposition of my subject, I will be governed by what

branch of honey production I want the hive for. If I were working for comb-honey exclusively, I would possibly adopt the eight-frame hive, but do not think I would. I do not like a small hive, especially for the general bee-keeper. They need closer attention; will furnish more destitute colonies in the Fall, and more and smaller swarms than hives of larger capacity.

If I were running for extracted-honey alone, I would, without hesitation, recommend a large hive; the only point of limit would be convenience in handling. But for both comb and extracted-honey from the same apiary, I have adopted a size of hive suited equally well for both kinds of honey, and of uniform size, viz.: the nine-frame simplicity, single-walled hive, with chaff hive for Winter and early Spring protection.

In conclusion I want to be liberal; I want to be found broad in my make up. And I recommend to the beginner, and to those who have not got a movable-frame hive, to secure some reasonably good movable-frame hive, with crates to hold one-pound sections, and learn to succeed with it.—*Read at the Missouri Convention.*

## Methods of Introducing Queens.

J. H. ANDRE.

A few days after the swarming season was over I noticed one of my colonies of bees showing the peculiar actions of one without a queen. Thinking to examine it in a day or two, it slipped my memory and was forgotten. Three or four weeks afterward I noticed it was not storing pollen, when colonies in normal condition should be storing it plentifully. I examined it and it was not queenless. Having but a few minutes to spare, I smoked it thoroughly until the bees were stupefied. I then smoked the bees in all the small boxes and shook out the bees and queen at the entrance of the hive. The next day I examined the colony, finding eggs, showing the experiment to be successful.

Another colony of well run hybrids cast a swarm which was returned and the queen destroyed. Some eight days after it swarmed again. The swarm was hived and all bees were driven from the colony the next morning, the frames looked over, queen-cells destroyed, returning the bees driven out, also the swarm, destroying the queens. A laying queen was daubed with honey and run in with the bees, being readily accepted by the bees, notwithstanding I overlooked several cells of full grown queens which were destroyed and thrown out a few days after.

Another one which cast a large swarm, which absconded, was treated the same as No. 2 except the queen and a handful of bees were shaken on the brood-frames before the swarm was returned at the entrance. This was also a success and saved at least a week's time the colony would have been without a laying queen, which it would have lost had it been left to hatch a queen.

Probably one having some knowledge of bees would be successful in introducing either by the thorough smoking plan or by daubing the queen with honey, provided the bees were driven out in the latter case and the queen dropped at the entrance when the swarm was returning, still I only give the experiments for what they are worth, and would not advise beginners to follow them unless they had plenty of queens to experiment with.—*National Stockman.*

## Specialist—Thinker—Enthusiast.

JOHN B. GREGORY.

"Things done by halves are never done right." O, that we might all realize what is contained in these words!

Under your own observation, and within your own acquaintance, is there not some farmer who always does things by halves? Does he ever make a study of his business? Is he trying to learn something new daily about his business, which shall be of service to him next season?

Is he what you can call a successful man? Is he rich or poor? Is he wise or ignorant?

A man to be successful in any good undertaking must make a special study of his calling, and go at it as though he intended to get everything that there is in it. He should be a deep thinker, an experimenter, and an enthusiast. But he must not try to learn it all by experiment; he should read the best literature treating on his pursuit; and not only read, but re-read and study such articles as he thinks will be of benefit to him in any way.

Is there anything more painful than to see a farmer who does what little work he has to do on the same plan and in the same way that it was done 75 years ago; and were you to ask him

why he did thus and so, he could make only one answer, viz.: "Because father did."

Do we, as bee-keepers, belong to the "Because father did" class? I hope that we do not.

We should know why we do as we do; and also, we should know how to do to get the best results; also we should know what to do. These things may be accomplished only by hard study and deep thought.

There is a place for every man, and a man for every place; and if a man is in the right place he will love his calling.

I would say to all who are engaged in bee-keeping, who do not love their calling, that they had better get into some other business, for ten chances to one, they have mistaken their calling.

To be successful we must not only have thoughts of our own, but we must read the thoughts and experience of others.

To do this we must necessarily read the bee-periodicals. Make yourself a regular subscriber to one, or more if you can, and preserve the numbers of each volume for reference, and refer to them. —*Bee-Keepers' Guide.*

Garrettsville, N. Y.

## Black vs. Italian Bees.

JAMES HARKER.

I do not like to hear some people hacking away continually at the poor little black or native bee. Why is it? Have they nothing else to write about, or have they ever tried any other than the fine, golden Italians?

I have been producing honey for the market for nearly 30 years, and I think I know whereof I speak. Either my experience is not like others, or else I never had the good ones they write about so much. I have bought a good many Italian queens, and I think some of them ought to have been pure.

I have tried the black and Italian bees side by side. In the Spring the Italians had the preference, but ere Fall my little black, ugly fellows, beat them all out and out, both in surplus and increase. But, many say, we do not want increase. Very well, I was simply testing them, and all will admit that the blacks do enter the surplus cases more readily, cap their honey whiter, and are more gentle to handle.

Now, what are the advantages of the Italian over the blacks? "Oh, they gather so much more honey, and protect their hives much better," some will say.

Perhaps they do the latter, for I have some Italians that have to be smoked until they are stupid before I can do anything with them.

"They are not pure, they are hybrids," some one says. So they are; and as long as there is Italian blood in them they will fight and protect their hives. It may be I have a good race of my own, for I have a number of colonies which have stored for me 120 pounds in 1-pound sections, and others over 130 pounds, in larger sections, and I will compare my honey with that of any one, I care not who, for quality and appearance. Some of these were prime swarms, others old colonies.

Argyle, Wis.

### Convention Notices.

☞ An informal meeting of the New York State Bee-Keepers' Association will be held on the fair grounds, at Syracuse, N. Y., Saturday, Sept. 12, at 1 p.m. G. H. KNICKERBOCKER, Sec.,
P. H. ELWOOD, Pres. Pine Plains, N. Y.

☞ The Ionia Bee-Keepers' Association will hold its next meeting on Tuesday, Sept. 15, 1891, at Ionia, Mich. HARMON SMITH, Sec., Ionia, Mich.

☞ The Central Michigan Bee-Keepers' Association will hold their next meeting at Pioneer Rooms, Capitol Building, Lansing, Mich., Wednesday, Sept. 16, 1891, commencing at 9 a.m. A cordial invitation is extended to all.
W. A. BARNES, Sec., Lansing, Mich.

☞ The 5th semi-annual convention of the Missouri State Bee-Keepers' Association will be held at Sedalia, Mo., on Wednesday and Thursday, Oct. 7 and 8, 1891. Rates for those attending are promised at the Sicher and Kaiser Hotels at $1.50 per day each. All persons so desiring are requested to make apiarian exhibits. A cordial invitation to attend the convention is extended to everybody.
J. W. ROUSE, Sec., Mexico, Mo.

☞ The Southwestern Wisconsin Bee-Keepers' Association will hold its next meeting on Wednesday and Thursday, Oct. 14 and 15, 1891, at Fennimore, Grant Co., Wis.
BENJ. E. RICE, Sec., Boscobel, Wis.

**Removal.** — Circumstances have made it to our advantage to remove to more commodious quarters, and we may hereafter be found at 199, 201 and 203 East Randolph Street—two blocks north and one block east of our former location. Previous to removal we occupied the fifth floor of a building, but we now occupy the *third* floor of a building near the corner of Fifth Avenue and Randolph Street. Our friends are always welcome.

## CONVENTION DIRECTORY.

*Time and place of meeting.*

1891.

Sept. 12.—New York State, at Syracuse, N. Y.
G. H. Knickerbocker, Sec., Pine Plains, N. Y.

Sept. 15.—Ionia, at Ionia, Mich.
Harmon Smith, Sec., Ionia, Mich.

Sept. 16.—Central Michigan, at Lansing, Mich.
W. A. Barnes, Sec., Lansing, Mich.

Oct. 7, 8.—Missouri State, at Sedalia, Mo.
J. W. Rouse, Sec., Mexico, Mo.

Oct. 14, 15.—S. W. Wisconsin, at Fennimore, Wis.
Benj. E. Rice, Sec., Boscobel, Wis.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of the time and the place of each future meeting.—THE EDITOR.

**North American Bee-Keepers' Association**

PRESIDENT—P. H. Elwood....Starkville, N. Y.
SECRETARY—C. P. Dadant.....Hamilton, Ills.

**National Bee-Keepers' Union.**

PRESIDENT—James Heddon..Dowagiac, Mich.
SEC'Y AND MANAGER—T. G. Newman, Chicago.

# Bee and Honey Gossip.

☞ Do not write anything for publication on the same sheet of paper with business matters, unless it can be torn apart without interfering with either part of the letter.

### Half a Crop.

My crop of white honey this season is nearly 7,000 pounds, being half a crop. At present, with a profusion of bloom and bees very busy, still each day the colony on the scales grows lighter in weight. JESSE OREN.

Mt. Auburn, Iowa, Aug. 31, 1891.

### Cold Weather and Drouth.

My bees have done as well as could be expected. I had 12 colonies, Spring count, which cast 6 prime and 2 after-swarms. I have taken off 125 sections well filled, and have some to extract—say, 25 to 50 pounds. As near as I can ascertain, about 12 pounds per colony will be the extent of the crop up to date. Owing to cold weather and continued drouth, the first crop of alsike clover afforded no nectar, and there was but little in the second crop. I do not allow ants or spiders to come near my hives, nor grass or weeds to grow over 2 inches high within 10 feet of any hive. This is the second poor year for bee-keepers in this locality, and it is rather discouraging to beginners, but it is said that the darkest hour is just before the break of day, and I intend to continue to feed my bees if they require it.

JACOB MOORE.

Ionia, Mich., Sept. 3, 1891.

### Heart's-Ease and Red Clover.

Bees wintered fairly well in this vicinity, but although we had profuse fruit bloom, the bees did not gather much nectar from it, owing to the wet weather, which continued until the latter part of July. I had to feed my bees through June, and some in July, and but few of my colonies had any honey on August 1; since then, however, I never saw bees do better. They are working on heart's-ease and red clover. We have very little white clover here yet. If we have no frost in September we will secure a good crop of honey. From 28 colonies I have had but 13 swarms. I have kept the bees from swarming, as I would rather have honey than bees. Some of my colonies are in 10-frame Langstroth hives, tiered up three stories high, and I run these colonies for extracting and comb-honey at the same time. JAMES KINCAID.

Clay Centre, Nebr., Aug. 28, 1891.

### Poor Outlook.

My bees are doing very poorly. I had 5 colonies, Spring count, two of which were weak, and have not enough honey stored for Winter, but the remaining 5 colonies of the 7 which I now have are supplied. The honey harvest is about over here. P. J. KREPS.

Carbon Centre, Pa., Sept. 1, 1891.

### Species of Mint.

I mail you to-day a box containing a specimen of a plant which grows abundantly in a pasture about 60 rods from my house. The owner of the field, about 15 years ago, seeded it with red-top grass, and this weed came with it. A few bunches at first, but now the weed has entire possession of about six acres, and is spreading fast. No one that I have inquired of has ever seen anything like it. My greatest interest in the plant comes from the fact that it seems to yield considerable honey. It blooms about Aug. 1, and lasts until frost. Bees work on it all day; not so eagerly as on some other plants, but it is always easy to find several bees. It

seems to yield no pollen, and the blossom resembles the buckwheat blossom somewhat, except that it has purplish specks. I would like to know the name of this weed, and where it grows naturally, and will gladly answer any questions you may wish to ask concerning it.

EUGENE WILBER.

Conklin Forks, N. Y.

[This is *Pycnanthemum lanceolatum*, one of the mints. I do not know how profuse the nectar flow is from the mints. I know the honey is very nice, and the bees seem always able to get some. It is rare to see mint bloom free from bees. I regard the mint as among the most hopeful plants for experiment. —A. J. COOK.]

### Better than for Several Years.

While around my apiary to-day I saw hundreds, if not thousands, of chilled bees not able to reach the hive. Chilled with cold in August, and only a few days ago they were hanging out in great numbers. What extremes of temperature in a few days! We had a splendid season in this section, from about June 15 until July 15, and the bees were gathering large quantities of beautiful, white honey—no dark honey nor bug-juice. I see some persons report a very poor season, almost in this neighborhood, but I must report the best season for several years, although the basswood, which I looked forward to with a good deal of hope, was a total failure in this section. JAMES HARKER.

Argyle, Wis., Aug. 29, 1891.

### Best Season for Ten Years.

We have had the best honey season up to July that we have had for ten years, in this part of the country. My best colonies stored 60 pounds of honey, and cast two swarms each. Although I have got lots of honey, but little of it was No. 1. My bees spoiled the poplar honey by mixing black-gum with it, which made the honey very bitter. They spoiled the white honey by mixing honey-dew with it, of which we had the most that was ever known here—our hives are full of it. I do not know what it will do for our bees this Winter, but as I am not prepared to extract, they will have to winter on it. We have had plenty of rain all season, and crops of all kinds are good. Golden-rod has just begun to bloom, and it looks very promising for a Fall crop of honey—in fact, all of the Fall flowers look fine.

JOSEPH A. WEEKS.

Young's Creek, Ind., Aug. 31, 1891.

[It will probably not be safe to attempt to Winter bees on honey-dew. You had better feed them with sugar syrup, if they do not gather sufficient stores for Winter from the Fall flowers, and keep the honey-dew for feeding the bees next Spring.—ED.]

### Bees in the "Dark Continent."

A writer in the *Canadian Bee Journal* for Aug. 1 has raised a question, and friend Jones steps in to say that African bees can sting, and made him run when in Egypt, simply because he treated a few of their companions to a bottle of spirits. I have not tried Punics with spirits, as I do not use them, so cannot say if it will make them bad tempered. We had the Egyptian bee here in Hallamshire 25 years ago, and all who tried them said they were too savage to keep. They were introduced into England and America by the late Mr. Woodbury—the English Langstroth. The bees have yellow bands and grey hairs; species *Apis Faciata*; so they are nothing like Punics—*Apis Niger*. Africa is a very large tract of land, and it is just as fair to call them "African" as it is to call Cyprians, Italians, Carniolans and German bees "European." Punic is the proper name for these black bees, and all classic students will be able to fix the locality on a map of Africa. I have an idea that the number of distinct races of honey-bees in Africa are very many; hence, we must not begin confounding missionary and other reports with the Punic bees. These bees have only to be tried; let them stand or fall on their own merits; to class other bees with them is as fair as classing Cyprians with Italians.

A HALLAMSHIRE BEE-KEEPER.

Sheffield, England.

# Wavelets of News.

### Bees are Good Helpers.

The bees are good helpers on the farm, return more in proportion to the outlay than any other workers, and should be made as comfortable as possible. It must be remembered that bees not only gather honey, but, also, that in gathering it, they fertilize all the flowers on the farm, thereby increasing their product.

Bees need water, and if there be none near, give it in a shallow pan, with sticks or straws floating on the surface of the water. On these "floats" the bees may drink without drowning.—*Exchange.*

### Fall Swarms.

In this locality there has been much rain—much more than usual during the month of August, and vegetation is very rank. This promises Fall honey if nature's laboratory is in running order. Hives are full and running over with bees, and let a flow of nectar occur, swarming will be the order of the day as much as during the month of June. I have known swarms to issue as late as Sept. 20, and fill their hives with comb and honey. The reports of a crop of honey thus far throughout the country show quite a deficiency, and it would be wisdom on the part of bee-keepers to secure every pound of Fall honey possible, in lieu of increase. If I were going to run for extracted-honey this Fall, I would extract what there is in the combs, so as to be sure that there is no honey-dew, and endeavor to obtain a pure article from Fall flowers.—MRS. L. HARRISON, in the *Prairie Farmer.*

### Bees and Honey.

The bees have had a busy season of it this Summer. The absence of any prolonged wet weather has enabled them to gather thousands of pounds of sweets, from the fields and gardens.

The question of the bees injuring fruit is again brought up by those who devote more study to horticulture than to bees, but if these same fruit-growers would look to the birds, they would find that they are the natual enemies, and not the bees. The birds are not only the enemies of the fruit-growers, but the enemies of the bee-keepers. If it was not for the great prolificness of the queen-bees, whole colonies of bees would be destroyed by the voracious birds.

So determined do the birds become at times that they follow the bees up to their hives, and watch for their coming out to seize them. The shot-gun is the only appeal for the bee-keeper at such times. In the fields the birds are attracted to the bees, probably for the little sacs of honey which they carry, and not so much for the bees themselves.

The birds are also the chief offenders against the fruit-growers. They pierce the fruit with their bills, and allow the nectar to escape. Decay soon sets in, but the bees are on hand, and sip the juice as it escapes. They never touch sound fruit, but always go for those that have had their skin punctured by the birds, thorns or limbs. All of this escaping nectar is honey lost if the bees were not ready to gather it up. As economizers of waste products the bees are, therefore, unequaled.—HELEN WHARBURDON, in the *Wisconsin Agriculturist.*

### Bees and Fruit-Growing.

It is simply an aggravated case of base ingratitude on the part of the fruit-grower if he finds fault with his bee-keeping neighbor on account of the injury done to fruit by bees. The fruit-grower, in fact, has no warmer friend, no more useful agent, than the pollen-carrying, honey-seeking little insect. The interests of fruit-grower and bee-keeper, far from being antagonistic, lie indeed so nearly in the same direction, that we urgently advocate the combine of the two avocations in the same person.

The leading cause of barrenness in fruit trees and bush fruits is lack of proper pollenation, due again, in many cases, to the absence of the right kind of pollen, and in others to its non-transfer from the stamens to the needy pistils. Many trees are not self-fertilizing, either because their own pollen upon their own pistil has no potency, or because the pollen is not discharged at the time when the pistils are receptive. A notable example of the one case is the chestnut, and one of the other case, the wild goose plum at the North. The remedy to be suggested is planting a number of trees or varieties near enough together, so they can furnish what pollen they need to each other.

On the whole, however, we believe that more trees, shrubs and garden plants have to depend on the agency of insects, especially bees and bumble-bees,

for the transfer of suitable pollen to the pistils, and thus to become fruitful, than is usually supposed by the average soil-worker. We have recently heard of a number of instances where cherry trees were almost fruitless for a number of years, during which no bees were kept in the vicinity, and all at once began to bear heavy regular crops so soon as an apiary was established near by.

We believe bees are a good thing, and a number of colonies should be kept in or near every orchard.—*Popular Gardening.*

### Marketing Honey.

Our honey should be just as we represent it. One-pound sections are the leading packages for comb-honey, put up in 12 and 24-pound crates, with glass on one side. Extracted-honey in 3-pound glass jars, labeled with your name. The market demands good honey, as well as good butter.—W. A. SHAFBIT, in *Northwestern Agriculturist.*

### Swarm-Catcher.

We tried an experiment recently in our own bee yard which may suggest to some one an idea for a swarm-catcher which will be much handier than anything we now have, and prevent the bees from alighting in high trees or other inaccessible places.

The discovery happened as follows: In one of our hives we had a division-board across the back, which had been left there by mistake, and had a good deal of comb attached to it. Just as we were removing it, a swarm issued from a neighboring hive, and several of the bees seemed attracted by the comb, and alighted on the division-board which we held in our hand.

An idea struck us that we might use this attraction to advantage, and accordingly we held the board in front of the hive, catching several more bees, and then we carried the division-board with its bees across to a tree upon which a former swarm had alighted, and laid it across the limb with the comb hanging down.

In a very short time the other bees commenced to alight upon it until all were settled down, with the exception of a dozen or so. We then carried the board to the stand we wished to hive the bees upon, the stray ones following us, and set the board in front of the hive.

Only a few minutes elapsed until the bees began to drop off the board and run in the hive, and when the majority had done so we shook off the rest and they followed.

We carried the division-board back to the tree, and set it again upon the limb, and two other swarms have since alighted upon it and been easily hived. The question arises—cannot something valuable be worked out from this idea?—*Canadian Bee Journal.*

### Bee-Keeping for Women.

Well, I will not say bee-keeping for ladies exactly, for the world now knows the definition of lady as one not accustomed to work. So it will not do here. Lady friends, bee-keeping is not so very hard after all, if one takes an interest in it. I do more work in my apiary than any two men I could hire around here.

Let us believe that bee-keeping belongs to women; anyhow, it is generally in the yard and around the house like chickens, calves, etc. And I would especially advise women in delicate health to take up the care of bees as a tonic, and you will find it a good one, too.

If I was shut in-doors all the time I would soon be in bed half of my time. Get you a few colonies of bees in some movable-comb hives. We use the simplicity, but any frame hive, not too heavy or large, is all right. By all means have your hives and frames all uniform.

Experiment with queen-rearing; study the flowers that produce honey; note their time of blooming, etc., get interested, and you will soon feel like a new being, and have honey to sweeten the whole family. I am very busy at this time. Will try to give you some interesting reading soon.—MRS. JENNIE ATCHLEY, in *Southern Horticulturist.*

Farmersville, Texas.